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REMARKS/ARGUMENTS

Claims 10-16 and 18-22 are pending in this application.

Applicants appreciate the Examiner's indication that claims 10-15 and 18-22 are allowed.

Claim 16 was rejected under 35 U.S.C. § 102(b) as being anticipated by Nakashima et al. (EP 0 878 905). Claim 16 was further rejected under 35 U.S.C. § 102(a) as being anticipated by Hori et al. (U.S. 6,552,475). In addition, claim 16 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Takata et al. (U.S. 6,557,225). Applicants respectfully traverse the rejections of claim 16.

Claim 16 recites:

"A surface acoustic wave apparatus, comprising:
a piezoelectric substrate;
at least one electrode for a surface acoustic wave element disposed on the piezoelectric substrate;
an electrode pad disposed on the piezoelectric substrate and arranged to be joined with a bump during a bump bonding process performed by a flip chip bonding system; and
a wiring electrode for electrically connecting the electrode pad and the electrode for the surface acoustic wave element, wherein:
the electrode pad includes a first electrode layer disposed on the piezoelectric substrate and a second electrode layer laminated on the first electrode layer;
the second electrode layer and the wiring electrode are integral with each other and include a common conductive film;
the electrode for the surface acoustic wave element and the first electrode layer of the electrode pad, to be connected with the electrode for the surface acoustic wave element, are arranged in contact with each other; and
an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed."
(emphasis added)

Support for the amendment to Claim 16 is clearly provided in Fig. 20 of the originally filed application, and the full paragraph on page 46 of the originally filed specification.

With the unique combination and arrangement of features recited in Claim 16,

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including the feature of "an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed," Applicants have been able to improve the reliability of the electrical connection by the wiring electrodes, and to separately optimize the film thickness of the electrode of the surface acoustic wave device and the thickness of the first electrode layer of the electrode pad so as to more accurately optimize the surface acoustic wave device according to various conditions, such as frequency and band width (see, for example, the full paragraph on page 46 of the originally filed specification).

The Examiner alleged that each of Nakashima et al., Hori et al. and Takata et al. teaches all of the features recited in Applicants' claim 16. Applicants respectfully disagree.

Claim 16 has been amended to recite "an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed."

The Examiner alleged that element 14 of Nakashima et al. constitutes both the SAW electrode and the first layer of the pad, and that element 41a of Nakashima et al. constitutes the second pad layer and a wiring electrode integrally formed. This is clearly incorrect.

First, Applicants' claim 16 recites two separate and distinct structural elements -- the first electrode layer of the electrode pad and the wiring electrode for electrically connecting the electrode pad and the electrode for the surface acoustic wave element. The Examiner has alleged that a single element of Nakashima et al. (lead electrode 14) corresponds to both of these separate and distinct elements. This is clearly incorrect. Thus, at best, element 14 of Nakashima et al. could allegedly correspond to only one of the first electrode layer of the electrode pad and the wiring electrode recited in Applicants' claim 16. Therefore, Nakashima et al. certainly fails to teach or suggest both of the features of a first electrode layer and a wiring electrode as recited in Applicants' claim 16.

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Second, element 14 of Nakashima et al. is specifically disclosed as being a lead electrode (see, for example, the Abstract of Nakashima et al.), **NOT** a SAW electrode or a first layer of an electrode pad. Thus, contrary to the Examiner's allegations, element 14 clearly cannot be fairly construed as a SAW electrode. In fact, Nakashima et al. specifically discloses that element **12** is the interdigital transducer electrode means (SAW electrode), **NOT** element 14.

Third, as clearly seen in Fig. 1 of Nakashima et al., the electrode pad 40 of Nakashima et al. is spaced from the SAW electrode 12, and **no layer or portion** of the electrode pad 40 of Nakashima et al. is in contact with the SAW electrode 12. Thus, Nakashima et al. certainly fails to teach or suggest the feature of "the electrode for the surface acoustic wave element and the first electrode layer of the electrode pad, to be connected with the electrode for the surface acoustic wave element, are arranged in contact with each other" as recited in Applicants' claim 16.

Fourth, element 41a of Nakashima et al. is disclosed as being a layer of the first electrode pad 41. Layer 41a of Nakashima et al. does not electrically connect the electrode pad 41 and the electrode for the surface acoustic wave element 12. Thus, contrary to the Examiner's allegations, element 41a of Nakashima et al. clearly cannot be fairly construed as "a wiring electrode for electrically connecting the electrode pad and the electrode for the surface acoustic wave element" as recited in Applicants' claim 16.

Fifth, even assuming *arguendo* that element 14 of Nakashima et al. can be fairly construed as both the SAW electrode and the first layer of the pad, Nakashima et al. still fails to teach or suggest the feature of "an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed" as recited in Applicants' claim 16.

As clearly seen in Fig. 2A of Nakashima et al., all portions of element 14 of Nakashima et al. are disposed at exactly the same height. Nakashima et al. fails to teach or suggest that any portions of the element 14 could or should be disposed at a different height than any other portions of the element 14. Thus, Nakashima et al.

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certainly fails to teach or suggest the feature of "an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed" recited in Applicants' claim 16.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 16 under 35 U.S.C. § 102(b) as being anticipated by Nakashima et al.

Similar to Nakashima et al., Hori et al. fails to teach or suggest that any portion of the electrode pad 8 is in contact with the SAW electrode portions 3a and 3b. In contrast, the electrode pad 8 is spaced from the SAW electrode portions 3a and 3b, and the electrode pad 8 is connected with the SAW electrode portions 3a and 3b by the wiring electrodes 3c and 3d (see, for example, col. 6, lines 46-51 of Hori et al.). Thus, contrary to the Examiner's allegations, Hori et al. certainly fails to teach or suggest the feature of "the electrode for the surface acoustic wave element and the first electrode layer of the electrode pad, to be connected with the electrode for the surface acoustic wave element, are arranged in contact with each other" as recited in Applicants' claim 16.

Alternatively, if, as alleged by the Examiner, elements 3a-3d of Hori et al. are interpreted as being components of the SAW electrode, then Hori et al. clearly fails to teach or suggest any wiring electrodes. In fact, any additional wiring electrodes would be completely unnecessary since elements 3c and 3d are specifically disclosed as being wiring electrodes. Thus, as apparently interpreted by the Examiner, Hori et al. clearly fails to teach or suggest the feature of "a wiring electrode for electrically connecting the electrode pad and the electrode for the surface acoustic wave element" as recited in Applicants' claim 16. In other words, Hori et al. certainly fails to teach or suggest both of the features of "the electrode for the surface acoustic wave element and the first electrode layer of the electrode pad, to be connected with the electrode for the surface acoustic wave element, are arranged in contact with each other" and "a wiring electrode for electrically connecting the electrode pad and the electrode for the

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surface acoustic wave element" as recited in Applicants' claim 16.

Even assuming *arguendo* that elements 3a-3d of Hori et al. can be fairly construed as teaching the feature of "the electrode for the surface acoustic wave element and the first electrode layer of the electrode pad, to be connected with the electrode for the surface acoustic wave element, are arranged in contact with each other" as recited in Applicants' claim 16, Hori et al. still fails to teach or suggest the feature of "an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed" as recited in Applicants' claim 16.

As clearly seen in Figs. 1A and 1B of Hori et al., all portions of elements 3a-3d of Hori et al. are disposed at exactly the same height. Hori et al. fails to teach or suggest that any portions of any of the elements 3a-3d could or should be disposed at a different height than any other portions of the elements 3a-3d. Thus, Hori et al. certainly fails to teach or suggest the feature of "an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed" recited in Applicants' claim 16.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 16 under 35 U.S.C. § 102(a) as being anticipated by Hori et al.

With respect to the rejection of claim 16 over Takata et al., the Examiner alleged that "since making parts integral or separable has long been held to be within the skill expected of the routineer, providing #5a, 9a and 2a as one continuous layer, while providing #5a, 9a and 2a as another integral layer would have been obvious to one of ordinary skill in the art." Applicants respectfully disagree.

Regardless of whether it would have been obvious to integrally form the elements 5a, 9a and 2a of Takata et al., the resulting structure still fails to teach or suggest the features recited in Applicants' claim 16. Particularly, even if the elements 5a, 9a and 2a were integrally formed, the first layer of the electrode pad 5a would still be spaced from the SAW electrode 2a with the wiring electrode 9a disposed therebetween. Thus, even if the elements 5a, 9a and 2a of Takata et al. were integrally

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formed, the resulting device would still clearly fail to teach or suggest the feature of "the electrode for the surface acoustic wave element and the first electrode layer of the electrode pad, to be connected with the electrode for the surface acoustic wave element, are arranged in contact with each other" as recited in Applicants' claim 16.

Even assuming *arguendo* that elements 5a, 9a and 2a of Takata et al. can be fairly construed as teaching the feature of "the electrode for the surface acoustic wave element and the first electrode layer of the electrode pad, to be connected with the electrode for the surface acoustic wave element, are arranged in contact with each other" as recited in Applicants' claim 16., Takata et al. still fails to teach or suggest the feature of "an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed" as recited in Applicants' claim 16.

As clearly seen in Figs. 2A-2D of Takata et al., all portions of elements 5a, 9a and 2a of Takata et al. are disposed at exactly the same height. Takata et al. fails to teach or suggest that any portions of any of the elements 5a, 9a and 2a could or should be disposed at a different height than any other portions of the elements 5a, 9a and 2a. Thus, Takata et al. certainly fails to teach or suggest the feature of "an upper surface of the electrode for the surface acoustic wave device is disposed at a height that is different than a height at which an upper surface of the first electrode layer is disposed" recited in Applicants' claim 16.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the rejection of claim 16 under 35 U.S.C. § 103(a) as being unpatentable over Takata et al.

Accordingly, Applicants respectfully submit that Nakashima et al., Hori et al. and Takata et al., applied alone or in combination, fail to teach or suggest the unique combination and arrangement of elements recited in Applicants' claim 16.

In view of the foregoing remarks, Applicants respectfully submit that Claim 16 is allowable. Claims 10-15 and 18-22 are allowed, as indicated by the Examiner.

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In view of the foregoing remarks, Applicants respectfully submit that this application is in condition for allowance. Favorable consideration and prompt allowance are solicited.

The Commissioner is authorized to charge any shortage in fees due in connection with the filing of this paper, including extension of time fees, to Deposit Account No. 50-1353.

Respectfully submitted,

Date: October 31, 2005


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